NEWCOM Area
Suggested Mutual Aid Frequency Plan
06/2006 Edition

06/16/2006 Final-A

Since 9/11/2001, there has been an increased emphasis on improving "Interoperability" between emergency response agencies to increase the efficiency and safety of all personnel involved in Incident Command situations. Extensive research and consultation with local, state and federal agencies, including law enforcement, fire and EMS was conducted. This plan is in compliance with the State of Wisconsin-Statewide Mutual Aid Frequency Plan (2006 Edition), (*http://siec.wi.gov/docview.asp?docid=6715*), and the MABAS frequency plan (*http://www.mabasradio.org/*). The following plan has the approval of the State of Wisconsin, APCO, Frequency Coordinator. A communications plan such as this was recommended by the communications study conducted by CTA communications for the NEWCOM group. A similar plan is being adopted by the WCIA Group.

To qualify for the OJA, "2005 Homeland Security Equipment Grants for Radio Communications Interoperability", Radio Reprogramming grants, the following criteria has to be followed. Re-programming of radios with more than 16 channels according to the Statewide Mutual Aid Frequency Plan are to include a minimum of 10-mutual aid channels. VHF radios should include as many of the mutual aid channels as capacity allows. Reprogramming of radios with 16 channels or less, according to the statewide plan are to include a minimum of 5-mutual aid channels. This plan reflects these OJA requirements.

In addition, to simplify the operation and promote standardization between departments it is suggested to place the mutual aid channels in standardized/uniform locations on every radio. It is suggested that the fire and EMS agencies place the mutual aid channels in channel positions 7 through 15 on their radios. Most agencies have a minimum of 16 channel radios. This will allow the agency to customize their radios with the first six channels to be assigned with "local interest frequencies" such as their "county dispatch" etc. Radios that are capable of multiple "zones" should have at least one zone programmed with this channel plan.

According to national standards, once arriving "on scene" of an incident, responders must switch from the "Dispatch Channel" to a simplex "Ground Channel". For major fires and incidents where multiple departments respond to the same incident, they are suggested to utilize the MABAS channel assignment plan. (The MABAS plan is currently being updated to reflect the Wisconsin MARC channels).

Plan #1 – Fire – 16 channel:

NEWCOM - Suggested Common Channel Assignment - FIRE Departments - 16 channel Radios

CH#	Channel Name	Receive Freq.	Receive Tone	Transmit Freq.	Transmit Tone	Notes	
1						Local Channel Assignment	
2						Local Channel Assignment	
3						Local Channel Assignment	
4						Local Channel Assignment	
5						Local Channel Assignment	
6	Local County Fire Channel					Local County Fire Channel	
7	Fire Ground-Red	153.830	WZ/69.3	153.830	WZ/69.3	Fire Ground	
8	Fire Ground-White	154.280	WA/74.4	154.280	WA/74.4	Fire Ground	
9	Fire Ground-Blue	154.295	YA/85.4	154.295	YA/85.4	Fire Ground, Old Firecom,	
10	IFERN-Dispatch	154.265	M2/210.7	154.265	M2/210.7	IFERN Dispatch, Old WISTAC-1,	
11	MARC-1 (Repeater)	151.280	4Z/136.5	153.845	4Z/136.5	MARC-1 Repeater in each county	
12	MARC-2 (Simplex)	151.280	4Z/136.5	151.280	4Z/136.5	Mutual Aid, Helicopter Coord.	
13	MARC-3	154.010	XA/71.9	154.010	XA/71.9	Fire Grnd/Mutual Aid, Old WISTAC2,	
14	MARC-4	154.130	YZ/82.5	154.130	YZ/82.5	Fire Grnd/Mutual Aid, Old WISTAC3,	
15	State EMS-Coordination	155.280	D156	155.280	D156	EMS scene coordination, Helicopter	
16	WEM-Car	156.000	4Z/136.5	156.000	4Z/136.5	Emergency Management	

Plan #2-Fire – 16+ Channel (Narrow Band Capable):

NEWCOM - Suggested Common Channel Assignment - FIRE Departments - 16 or more channel Radios

CH#	Channel Name	Receive Freq.	Receive Tone	Transmit Freq.	Transmit Tone	Notes
1						Local Channel Assignment
2						Local Channel Assignment
3						Local Channel Assignment
4						Local Channel Assignment
5						Local Channel Assignment
6	Local County Fire Channel					Local County Fire Channel
7	Fire Ground-Red	153.830	WZ/69.3	153.830	WZ/69.3	Fire Ground
8	Fire Ground-White	154.280	WA/74.4	154.280	WA/74.4	Fire Ground
9	Fire Ground-Blue	154.295	YA/85.4	154.295	YA/85.4	Fire Ground, Old Firecom,
10	IFERN-Dispatch	154.265	M2/210.7	154.265	M2/210.7	IFERN Dispatch, Old WISTAC-1,
11	MARC-1 (Repeater)	151.280	4Z/136.5	153.845	4Z/136.5	MARC-1 Repeater in each county
12	MARC-2 (Simplex)	151.280	4Z/136.5	151.280	4Z/136.5	Mutual Aid, Helicopter Coord.
13	MARC-3	154.010	XA/71.9	154.010	XA/71.9	Fire Grnd/Mutual Aid, Old WISTAC2,
14	MARC-4	154.130	YZ/82.5	154.130	YZ/82.5	Fire Grnd/Mutual Aid, Old WISTAC3,
15	State EMS-Coordination	155.280	D156	155.280	D156	EMS scene coordination, Helicopter
16	WEM-Car	156.000	4Z/136.5	156.000	4Z/136.5	Emergency Management
	NATSAR	155.160	3A/127.3	155.160	3A/127.3	National Search & Rescue
	IFERN-2	154.3025	XZ/67.0	154.3025	XZ/67.0	Narrow-band channel Do Not use with FG-Blue
	Fire Ground-Gold	153.8375	ZZ/91.5	153.8375	ZZ/91.5	Narrow-band channel Do Not use with FG-Red & MARC-1
	Fire Ground-Black	154.2725	ZA/94.8	154.2725	ZA/94.8	Narrow-band channel Do Not use with FG-White & IFERN
	Fire Ground-Gray	154.2875	4Z/136.5	154.2875	4Z/136.5	Future narrow-band channel Do Not use with FG-White & Blue
	DNR-Red (receive)	151.430	4Z/136.5	-	-	DNR Authorization Required for Tx

Note: In the case of radios with capacity over 16 channels, if space permits, as many of the additional mutual aid channels as possible should be included in the radio. If the radio has "Zones" of 16 channels, additional zones should be added to include the other mutual aid channels. See list on page 8.

Plan #3 – EMS – 16 Channel:

NEWCOM - Suggested Common Channel Assignment – EMS/Ambulance Services 16 Channel Radios

CH#	Channel Name	Receive Freq.	Receive Tone	Transmit Freq.	Transmit Tone	Notes	
1						Local Channel Assignment	
2						Local Channel Assignment	
3						Local Channel Assignment	
4	**EMS-A** (ALS)	155.400	CSQ	155.400*	D156*	Advanced Life Support	
5	**EMS-B** (BLS)	155.340	CSQ	155.340*	D156*	Basic Live Support	
6	**EMS-C**oordination	155.280	D156	155.280	D156	EMS scene Coordination/Helicopter	
7	Fire Ground-Red	153.830	WZ/69.3	153.830	WZ/69.3	Fire Ground	
8	Fire Ground-White	154.280	WA/74.4	154.280	WA/74.4	Fire Ground	
9	Fire Ground-Blue	154.295	YA/85.4	154.295	YA/85.4	Fire Ground, Old Firecom,	
10	IFERN-Dispatch	154.265	M2/210.7	154.265	M2/210.7	IFERN Dispatch, Old WISTAC-1,	
11	MARC-1 (Repeater)	151.280	4Z/136.5	153.845	4Z/136.5	MARC-1 Repeater in each county	
12	MARC-2 (Simplex)	151.280	4Z/136.5	151.280	4Z/136.5	Mutual Aid, Helicopter Coord.	
13	MARC-3	154.010	XA/71.9	154.010	XA/71.9	Fire Grnd/Mutual Aid, Old WISTAC2,	
14	MARC-4	154.130	YZ/82.5	154.130	YZ/82.5	Fire Grnd/Mutual Aid, Old WISTAC3,	
15	Local County Fire Channel					Local County Fire Channel	
16	WEM-Car	156.000	4Z/136.5	156.000	4Z/136.5	Emergency Management	

* = Local Hospital CTCSS Tone could be substituted for the future State-Wide Common Digital tone of D156.

Plan #4 – EMS – 16 + Channel (Narrow Band Capable):

NEWCOM - Suggested Common Channel Assignment – EMS/Ambulance Services - 16 or more Channel Radios

CH#	Channel Name	Receive Freq.	Receive Tone	Transmit Freq.	Transmit Tone	Notes	
1						Local Channel Assignment	
2						Local Channel Assignment	
3						Local Channel Assignment	
4	**EMS-A** (ALS)	155.400	D156*	155.400*	D156*	Advanced Life Support	
5	**EMS-B** (BLS)	155.340	D156*	155.340*	D156*	Basic Live Support	
6	**EMS-C**oordination	155.280	D156	155.280	D156	EMS scene Coordination/Helicopter	
7	Fire Ground-Red	153.830	WZ/69.3	153.830	WZ/69.3	Fire Ground	
8	Fire Ground-White	154.280	WA/74.4	154.280	WA/74.4	Fire Ground	
9	Fire Ground-Blue	154.295	YA/85.4	154.295	YA/85.4	Fire Ground, Old Firecom,	
10	IFERN-Dispatch	154.265	M2/210.7	154.265	M2/210.7	IFERN Dispatch, Old WISTAC-1,	
11	MARC-1 (Repeater)	151.280	4Z/136.5	153.845	4Z/136.5	MARC-1 Repeater in each county	
12	MARC-2 (Simplex)	151.280	4Z/136.5	151.280	4Z/136.5	Mutual Aid, Helicopter Coord.	
13	MARC-3	154.010	XA/71.9	154.010	XA/71.9	Fire Grnd/Mutual Aid, Old WISTAC2,	
14	MARC-4	154.130	YZ/82.5	154.130	YZ/82.5	Fire Grnd/Mutual Aid, Old WISTAC3,	
15	Local County Fire Channel					Local County Fire Channel	
16	WEM-Car	156.000	4Z/136.5	156.000	4Z/136.5	Emergency Management	
	NATSAR	155.160	3A/127.3	155.160	3A/127.3	National Search & Rescue	
	IFERN-2	154.3025	XZ/67.0	154.3025	XZ/67.0	Future narrow-band channel Do Not use with FG-Blue	
	Fire Ground-Gold	153.8375	ZZ/91.5	153.8375	ZZ/91.5	Future narrow-band channel Do Not use with FG-Red & MARC-1	
	Fire Ground-Black	154.2725	ZA/94.8	154.2725	ZA/94.8	Future narrow-band channel Do Not use with FG-White & IFERN	
	Fire Ground-Gray	154.2875	4Z/136.5	154.2875	4Z/136.5	Future narrow-band channel Do Not use with FG-White & Blue	
	WISPERN	155.475	5A/156.7	155.475	5A/156.7	Law Enforcement Operations	
	Point To Point	155.370	4B/146.2	155.370	4B/146.2	Law Enforcement Operations	

- Local Hospital CTCSS Tone should be substituted for the future State-Wide Common Digital tone of D156.

Note: In the case of radios with capacity over 16 channels, if space permits, as many of the additional mutual aid channels as possible should be included in the radio. If the radio has "Zones" of 16 channels, additional zones should be added to include the other mutual aid channels. See list on page 8.

Plan #5 – Law Enforcement – 16 Channel:

NEWCOM - Suggested Common Channel Assignment – Law Enforcement 16 channel Radios

CH#	Channel Name	Receive Freq.	Receive Tone	Transmit Freq.	Transmit Tone	Notes	
1						Local Channel Assignment	
2						Local Channel Assignment	
3						Local Channel Assignment	
4						Local Channel Assignment	
5						Local Channel Assignment	
6						Local Channel Assignment	
7						Local Channel Assignment	
8						Local Channel Assignment	
9	WISPERN	155.475	5A/156.7	155.475	5A/156.7	WISPERN	
10	Point To Point	155.370	4B/146.2	155.370	4B/146.2	Point To Point	
11	MARC-1 (Repeater)	151.280	4Z/136.5	153.845	4Z/136.5	MARC-1 Repeater in each county	
12	MARC-2 (Simplex)	151.280	4Z/136.5	151.280	4Z/136.5	Mutual Aid, Helicopter Coord.	
13	MARC-3	154.010	XA/71.9	154.010	XA/71.9	Fire Grnd/Mutual Aid, Old WISTAC2,	
14	MARC-4	154.130	YZ/82.5	154.130	YZ/82.5	Fire Grnd/Mutual Aid, Old WISTAC3,	
15	State EMS-Coordination	155.280	D156	155.280	D156	EMS scene coordination, Helicopter	
16	WEM-Car	156.000	4Z/136.5	156.000	4Z/136.5	Emergency Management	

Plan #6 – Law Enforcement – Multi-Zone Radio – "Mutual Aid Zone":

NEWCOM - Suggested Common Channel Assignment – Law Enforcement Multi-Zone Radio

CH#	Channel Name	Receive Freq.	Receive Tone	Transmit Freq.	Transmit Tone	Notes	
1	1 V-TAC-1	151.1375	5A/156.7	151.1375	5A/156.7	Narrow Band,	
2	2 V-TAC-2	154.4525	5A/156.7	154.4525	5A/156.7	Narrow Band,	
3	3 V-TAC-3	158.7375	5A/156.7	158.7375	5A/156.7	Narrow Band,	
4	4 V-TAC-4	159.4725	5A/156.7	159.4725	5A/156.7	Narrow Band,	
5	5 V-CALL	155.7525	5A/156.7	155.7525	5A/156.7	Narrow Band,	
6	6=VTAC1-4	151.1375	5A/156.7	159.4725	4B/146.2	Narrow Band, Mutual Aid Repeater	
7	IFERN-Dispatch	154.265	M2/210.7	154.265	M2/210.7	IFERN Dispatch, Old WISTAC-1,	
8	NATSAR	155.160	3A/127.3	155.160	3A/127.3	National Search & Rescue	
9	WISPERN	155.475	5A/156.7	155.475	5A/156.7	WISPERN	
10	Point To Point	155.370	4B/146.2	155.370	4B/146.2	Point To Point	
11	MARC-1 (Repeater)	151.280	4Z/136.5	153.845	4Z/136.5	MARC-1 Repeater in each county	
12	MARC-2 (Simplex)	151.280	4Z/136.5	151.280	4Z/136.5	Mutual Aid, Helicopter Coord.	
13	MARC-3	154.010	XA/71.9	154.010	XA/71.9	Fire Grnd/Mutual Aid, Old WISTAC2,	
14	MARC-4	154.130	YZ/82.5	154.130	YZ/82.5	Fire Grnd/Mutual Aid, Old WISTAC3,	
15	State EMS-Coordination	155.280	D156	155.280	D156	EMS scene coordination, Helicopter	
16	WEM-Car	156.000	4Z/136.5	156.000	4Z/136.5	Emergency Management	

Note: In the case of radios with capacity over 16 channels, if space permits, as many of the additional mutual aid channels as possible should be included in the radio. If the radio has "Zones" of 16 channels, additional zones should be added to include the other mutual aid channels. See list on page 8.

Additional Mutual Aid Channels

Note: In the case of radios with capacity over 16 channels, if space permits, as many of the additional mutual aid channels as possible should be included in the radio. If the radio has "Zones" of 16 channels, additional zones should be added to include the other mutual aid channels.

CH#	Channel Name	Receive Freq.	Receive Tone	Transmit Freq.	Transmit Tone	Notes
	Fire Ground-Red	153.830	WZ/69.3	153.830	WZ/69.3	Fire Ground
	Fire Ground-White	154.280	WA/74.4	154.280	WA/74.4	Fire Ground
	Fire Ground-Blue	154.295	YA/85.4	154.295	YA/85.4	Fire Ground, Old Firecom,
	IFERN-Dispatch	154.265	M2/210.7	154.265	M2/210.7	IFERN Dispatch, Old WISTAC-1,
	MARC-1 (Repeater)	151.280	4Z/136.5	153.845	4Z/136.5	MARC-1 Repeater in each county
	MARC-2 (Simplex)	151.280	4Z/136.5	151.280	4Z/136.5	Mutual Aid, Helicopter Coord.
	MARC-3	154.010	XA/71.9	154.010	XA/71.9	Fire Grnd/Mutual Aid, Old WISTAC2,
	MARC-4	154.130	YZ/82.5	154.130	YZ/82.5	Fire Grnd/Mutual Aid, Old WISTAC3,
	IFERN-2	154.3025	XZ/67.0	154.3025	XZ/67.0	Narrow-band channel Do Not use with FG-Blue
	Fire Ground-Gold	153.8375	ZZ/91.5	153.8375	ZZ/91.5	Narrow-band channel Do Not use with FG-Red & MARC-1
	Fire Ground-Black	154.2725	ZA/94.8	154.2725	ZA/94.8	Narrow-band channel Do Not use with FG-White & IFERN
	Fire Ground-Gray	154.2875	4Z/136.5	154.2875	4Z/136.5	Future narrow-band channel Do Not use with FG-White & Blue
	V-TAC-1	151.1375	5A/156.7	151.1375	5A/156.7	Narrow Band,
	V-TAC-2	154.4525	5A/156.7	154.4525	5A/156.7	Narrow Band,
	V-TAC-3	158.7375	5A/156.7	158.7375	5A/156.7	Narrow Band,
	V-TAC-4	159.4725	5A/156.7	159.4725	5A/156.7	Narrow Band,
	V-CALL	155.7525	5A/156.7	155.7525	5A/156.7	Narrow Band,
	WISPERN	155.475	5A/156.7	155.475	5A/156.7	WISPERN
	Point To Point	155.370	4B/146.2	155.370	4B/146.2	Point To Point
	EMS-A (ALS)	155.400	D156*	155.400*	D156*	Advanced Life Support
	EMS-B (BLS)	155.340	D156*	155.340*	D156*	Basic Live Support
	EMS-Coordination	155.280	D156	155.280	D156	EMS scene Coordination/Helicopter
	WEM-Car	156.000	4Z/136.5	156.000	4Z/136.5	Emergency Management
	NATSAR	155.160	3A/127.3	155.160	3A/127.3	National Search & Rescue

MABAS System

The state legislation has been passed promoting the Mutual Aid Box Alarm System as a statewide standard for mutual aid. (http://www.mabas.org/mabashome.asp). To comply with the MABAS communications plans (http://www.mabasradio.org/), the former "WISTAC-1" channel will change to "IFERN", and it will be used for MABAS "Box Alarm" dispatching, response, staging and coordination. The old "FIRECOM" channel, will no longer be used as a coordination channel, and will be named "Fire Ground Blue", and will be used as a fire ground channel.

State EMS Channels

The Statewide EMS Channels have been changed to reflect uniform names. The Advanced Life Support channel, 155.400, will be called EMS-A. The Basic Life Support channel, 155.340, will be called EMS-B. . Hospitals will continue to have their individual CTCSS tone assigned. For emergency situations, Hospital radios will eventually have the EMS-A and EMS-B common, state-wide digital tone of D-156 programmed in the base radios (in addition to the local assigned CTCSS tone). A new statewide EMS Coordination channel (EMS-C) is being established. EMS-C will be available for EMS on-scene communications and also for air-to-ground communications with air-medical helicopters (in the event MARC-2 is in use). http://dhfs.wisconsin.gov/ems/system/EMS_Reports.htm#COMMUNICATIONS)

NATSAR

The National Search & Rescue frequency 155.160, (CTCSS 3A/127.3) is utilized by the Civil Air Patrol, volunteer equestrian, K-9 tracking, search & rescue and ski patrol groups. The frequency is available for agencies to coordinate search & rescue activities with the volunteer groups. Law Enforcement, Fire and EMS are encouraged to equip their units with this channel.

Narrow Band

The FCC executive order mandate released 12-23-2004 FCC establishes January 1, 2013 deadline for migration to 12.5 KHz technology. Manufacture and importation of any equipment on 25 KHz channel will be permitted until January 1, 2011. Any equipment purchased after 01/01/2011 will only operate on "narrow band" radio systems. Therefore the year of 2010 will probably be when most systems in Wisconsin may migrate to "narrow band". Some NEWCOM Counties are planning on moving to "narrow band" on some systems the year of 2010.

Any new equipment you purchase should be "narrow band" capable at this time. DO NOT purchase any radio equipment that is not narrow band capable, as it will be obsolete after 2010!

Interesting Links:

Accountability/Badge System: http://www.salamandertechnologies.com/DesktopDefault.aspx?tabindex=0&tabid=1

MABAS Web Site: http://www.mabas.org/mabashome.asp
     MABAS Radio Web Site: http://www.mabasradio.org/

MARC Plan: http://siec.wi.gov/docview.asp?docid=7649

NEWCOM Web Site: http://www.ncwrpc.org/newcom.html
     CTA Web Site: http://www.ctacommunications.com/

SAFECOM Web Site: http://www.safecomprogram.gov/SAFECOM/

Vendors:
     EF Johnson: http://www.efjohnson.com/index.asp
     Guardian: http://www.dtwc.com/pdf_files/GuardianProdCat.pdf
     Icom: http://www.icomamerica.com/
     Kenwood: http://www.kenwood.net/indexKenwood.cfm?
     Motorola: http://www.motorola.com/governmentandenterprise/public/functions/home/home.aspx
     Relm: http://www.relm.com/index.asp
     Yaesu: http://www.yaesu.com/?cmd=DivisionHome&DivisionID=65

Wisconsin APCO Web Site: http://www.apcowisconsin.org/
     Statewide Mutual Aid Frequency Plan: http://www.apcowisconsin.org/interagency/marc.pdf
     MARC Plan: http://www.apcowisconsin.org/
     SIEC Boards: http://www.apcointl.org/frequency/siec/documents/documents.htm
     APCO Web Site: http://www.apco911.org/index.html

Wisconsin Office of Justice Assistance: http://oja.state.wi.us/index.asp?locid=97

Wisconsin SIEC: http://www.siec.wi.gov/index.asp?locid=70
     2006 Funding: http://siec.wi.gov/docview.asp?docid=6717